Understanding Habitat Needs:
The Key to Protecting and Enhancing River Gamefish Habitat

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To develop long-term habitat management strategies for protecting or enhancing interior river fish populations, specific habitat needs of the target species must be known. Understanding where fish live and why they live there is the goal of an ongoing radio-telemetry study on the Turkey River. Habitats used by many fish species vary by season and with changing river conditions. By using radio-telemetry researchers can monitor habitats used by individual fish throughout the year and under a variety of river conditions.

A recent radio-telemetry study identified critical habitats and important seasonal shifts in habitat use on a 15-mile reach of the Wapsipinicon River. Deep-water holes, which are limited in availability on the Wapsipinicon River and many other interior rivers, were strongly selected as over-wintering areas by both channel catfish and walleyes. In fact, nearly all radio-tagged walleyes and channel catfish spent the winter months in the two deepest holes in the study reach. These holes provided water depths of up to 20 feet.

Recent habitat surveys found that like many Iowa Rivers, the Turkey River lacks deep-water holes like those used by overwintering channel catfish and walleye in the Wapsipinicon River study. A radio-telemetry study was initiated in the fall of 2000 to determine whether water depths in the Turkey River were sufficient for overwintering gamefish. Fifty-one walleye, smallmouth bass, and channel catfish have been implanted with radio-tracking devices below the lower-most dam on the Turkey River at Elkader, IA. During fall 2000, 2001, and 2002, radio-tagged individuals of all species moved more than 30 miles down the Turkey River to the Mississippi River. All radio-tagged channel catfish moved to the Mississippi River to overwinter, but about 50% of smallmouth bass and walleye remained in the Turkey River. All smallmouth bass and channel catfish that overwintered in the Mississippi River returned to the Turkey River in the spring. Only 50% of radio-tagged walleyes returned to the Turkey River. Our results suggest a lack of sufficient overwintering habitat in the Turkey River for some species.

This radio-telemetry study is designed to complement a statewide evaluation of relationships between available instream habitat and conditions in the watershed. The telemetry study will give us a better understanding of the types of habitats that fish need. Its companion study will help us recognize how factors such as landuse, geology, and hydrology in the watershed affect the availability of these habitats in a given stream. Results obtained from these studies will provide much needed information for

maintaining and enhancing critical habitat and gamefish populations in Iowa’s interior rivers.